REMARKS

This is in full and timely response to the Final Official Action of February 4, 2008. Reexamination in light of the following remarks is respectfully requested.   No new matter has been added.

I. Rejection under 35 U.S.C. §103(a)

Claims 1-2 are rejected under 35 U.S.C. §103(a) as being unpatentable over Williams (US 5963742 A) in view of Moore (US 7027977 B2) and further in view of Newsted et al (US 6016467 A). The rejection is respectfully traversed for reasons set forth below.

A. Claim 1

Claim 1 is directed to a method of automatic translation of sentences from a source language L_s selected from language L_1 to L_n to a target language L_t selected from languages L_1 to L_n comprising the steps of: (i) providing grammars G_1 to G_n of all the languages L_1 to L_n respectively, in which each grammar is unique to that particular language, and a text 'S' in the source language L_s as inputs; (ii) creating a unified grammar specification UG for the grammars G_1 to G_n, in which equivalent grammar production rules of each grammar G_1 to G_n are combined into a single unified production rule; (iii) separating the input text 'S' in the source language L_s into a list of tokens using a lexical analyser for the source language L_s; (iv) setting a current non-terminal symbol to the start symbol of the unified grammar specification UG; (v) obtaining a set of the grammar production rules from the united grammar specification UG, which contain the current non-terminal symbol as their target non-terminal; (vi) for each unified grammar production rule P in the set of the grammar production rules obtained from the previous step (v), taking each symbol one by one from a list of terminal symbols and/or non-terminal symbols corresponding to the source language grammar G_s, determining whether it is a terminal symbol or a non-terminal symbol; (vii) for each terminal symbol obtained from the previous step, which is equivalent to a corresponding symbol in the list of tokens T of the input text in the source language L_s, considering the next symbol in said list of terminal symbols and/or non-terminal symbols corresponding to the source language grammar G_s

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and for each non-terminal symbol E_s obtained from the previous step, repeating step (v) onwards with E_s as the current non-terminal symbol; (viii) if all the symbols in the said list of terminal symbols and/or non-terminal symbols corresponding to the source language grammar G_s match with all the symbols in the list of tokens T of the input text in the source language L_s, obtaining a list of symbols t corresponding to the target language grammar G_t from the unified grammar production rule P and for those symbols which do not match, repeating step (vi) onwards for a next unified grammar production rule P defined for the non-terminal symbol 'E'; (ix) taking each symbol one by one, from the list of symbols t corresponding to the target grammar G_t and determining whether it is a terminal symbol or a non-terminal symbol; (x) for each terminal symbol obtained from the previous step outputting the symbol, and considering the next symbol and for each non-terminal obtained from the previous step, obtaining another unified grammar production rule P corresponding to that non-terminal symbol and repeating the previous step with the new unified grammar production rule, till all the symbols in the list of symbols t corresponding to the target language grammar G_t are exhausted. Support for the claim amendments can be found throughout the specification, for example, in FIG. 3.

Williams arguably teaches about using speculative parsing to process complex input data. Moore arguably teaches indexing productions for use in a left-corner chart parser which parses input text containing input symbols. Newsted et al. arguably teaches a method and apparatus for program development using a grammar-sensitive editor.

However, none of the applied art, alone or in combination, disclose, teach or suggest steps of "creating a unified grammar specification UG for the grammars G_1 to G_n, in which <u>equivalent grammar production rules of each grammar G_1 to G_n are combined into a single unified production rule.</u>"

Responding to argument made by the Applicant in the response filed November 28, 2007, the Office Action asserts that "the invention disclosed in the prior art, particularly by Williams teaches the capability to handle multiple languages and grammar. Also, the Office Action asserts, as to Moore, that using combined grammars in addition to translation method, produce a system that

can parse and translate various languages into other various languages is possible, given the grammar is present for that particular language.

However, the Office Action fails to respond to the applicant's argument about "a unified grammar specification." That is, Williams fails to disclose, teach or suggest a unified grammar specification, even though Williams taught or suggested the capability to handle multiple languages. Mere capability to parse two languages in a single program does not suggest a unified grammar, since language translation includes much more than just parsing.

In the method according to the present invention, the grammars of multiple languages are unified so that when an input sentence in one language is parsed, equivalent sentences of all the other input languages are automatically available.

On the other hand, in the applied art, the parsing and translation steps are separated from each other and it requires additional complex processing to translate the parsed sentences.

Thus, the method according to the present invention can handle many input grammars at a time whereas in the prior art, there is no uniformity or commonality that can be used in the translation between different languages. Therefore, in the applied art, each translation should be handled in a different manner in the prior art.

If the rejection is not withdrawn despite the above argument, Applicant respectfully request to specify what phrases or language in the applied art suggest "<u>a unified grammar specification UG for the grammars G_1 to G_n, in which equivalent grammar production rules of each grammar G_1 to G_n are combined into a single unified production rule</u>."

Accordingly, since the applied art does not disclose, teaches or suggests the features of claim 1, withdrawal of this rejection and allowance of the claim is respectfully requested.

B. Claim 2

As to dependent claim 2, it is respectfully submitted that since claim 2 depends on claim 1, it is allowable for at least the reasons that claim 1 is allowable, and it is further allowable by reason of the additional limitations set forth therein.

IV. Conclusion

In view of the following arguments, all the claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicants reserve the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. DAD-0012 from which the undersigned is authorized to draw.

Dated: May 5, 2008

Respectfully submitted,

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